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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,141	12/05/2001	Alexander Beeck	033275-316	3862

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EXAMINER	
WIEHE, NATHANIEL EDWARD	
ART UNIT	PAPER NUMBER
3745	
MAIL DATE	DELIVERY MODE
11/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/002,141	BEECK ET AL.	
	Examiner	Art Unit	
	NATHANIEL WIEHE	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,16 and 22-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,16 and 22-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 20 July 2009 have been fully considered but they are not persuasive.

Firstly, the examiner deeply regrets any confusion due to the inadvertent use of both reference numbers (56) and (58) to describe both the second passage and the dust discharge aperture. However, it is clear that applicant has properly understood the rejection as correlating Yamarik's tip passage (56) to the claimed second passage and the hole at the end of the passage, aperture (58), to the claimed dust discharge aperture. Such an understanding is apparent at least from applicant's assertions that "the Examiner characterizes the aperture 58 as a "discharge hole"".

Applicant first argues that the aperture at the end of the tip passage is not necessary larger since the hole would "presumably take a similar form, i.e., slot-like" to that of the discharge slot (64). The examiner respectfully disagrees. The aperture is plainly shown as larger than the other holes (58) of the tip passage (56). Also, Yamarik calls the aperture a hole and not a slot.

Applicant also argues that the second passage of Yamarik is not tangential to the curved flow path. The examiner respectfully disagrees. First, the arrangement of Yamarik's second passage and curved flow path is identical to that of the instant invention. Second, the "solid line arrow", as well as the broken line, annotated onto the drawing of Yamarik are themselves tangential to the curved flow path.

Next, Applicant argues that Yamarik does not present a "straight line of sight" as required by the claim. The examiner respectfully disagrees. Firstly, the broken line, annotated by applicant onto the figure of Yamarik, itself peers over the crest of the vane such that one can see some portion of the leading edge wall. Further, the claim only requires “a first potion” of the wall to be visible along the “straight line of site", as opposed to the entire or even a substantial portion of the third wall.

Applicant next asserts that "the vane 54 necessarily obstructs the vast majority of the passage 56" and thereby frustrates the use of a borescope. Such an argument appears to contend that Yamarik teaches away from the introduction of a borescope, but such an argument is inappropriate as the rejection is based under § 102 and not § 103. Further, borescopes are flexible instruments thereby minimizing the detrimental effect purported by applicant.

Lastly, Applicant purports that the flow through the second section of Yamarik would not be relatively free of particles. The examiner respectfully disagrees. Applicant identifies the operation of the instant invention whereby “[t]he particles, *due to their mass and inertia*, take the path through the dust discharge aperture and tend not to flow via deflection into the ‘second section’ of the flow passage”[emphasis added]. As previously described, Yamarik would operate in the same fashion. The mass and inertia of the dust relative to the coolant flow would direct the dust along the tip passage and oppose downward flow of the dust into the second section.

Finally, applicant has presented new claims bringing in a new limitation not previously presented. Such a new limitation has necessitated the introduction of a new grounds of rejection in view of Semmler et al. (6,347,923)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3,16 and 22-29 are rejected under 35 U.S.C. 102(b) as being anticipate by Yamarik et al. (4,278,400), hereinafter "Yamarik". Yamarik discloses a rotating blade of a turbine having a coolant passage with a curved flow section (36,38) in a fist flow direction and a second passage (56) parallel to the axis of the turbine and branching off the coolant passage tangentially to the curved flow section. The second passage is arranged in the neighborhood of the blade tip and extends to the trailing edge of the blade at a dust discharge aperture (58) located at the end of the second passage (56). Further, the dust discharge aperture (58) and second passage (56) are capable of allowing for the introduction of a borescope therethrough. The second passage (56) acts as a dust removal passage due to the inertial effects of the rotation of the blades on the relatively high mass dust particles separating these particles in the curved flow

section while the main coolant flow turns radially inward to the second section. Further, Yamarik's blade includes a first section (36) which flows toward the curved flow section, a second passage (56) flowing tangentially away from the curved section, and a second section (26) flowing away from the curved section. A first wall (34) defines the first and second sections. A second wall includes a first portion (22) defining the first section and a second portion (16) defining the second passage (56). A third wall is parallel to the first wall (34) so as to defining the second section and has a first portion and a second portion that defines the second passage. Additionally, there would be a straight line of sight through the second passage to the first section of the third wall, i.e. to some part of the leading edge.

Claims 3,16 and 22-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Semmler et al. (6,347,923), hereinafter "Semmler". Semmler discloses a component, i.e. blade, of a fluid flow machine including a leading edge (16), trialing edge (18), and a coolant passage. The coolant passage includes a first section (24) through which cooling medium flows toward a curved flow section, a second section (26) adjacent the first section (24) through which a cooling medium flows away from the curved flow section, the first (24) and second (26) sections are separated from each other by a first wall (32) and a second wall (34) has a portion defining the second section (26). As most applicable to Fig. 4, Semmler includes a second passage (42) tangentially branching off of the curved flow section and perpendicular to the first and second sections (24,26) that is defined by a second potion (40) of the second wall (34). The second passage (42) is partial defined by a second portion, i.e. the tip, of a third wall,

and the first section is partially defined by a first portion, i.e. the leading edge, of a third wall. The second passage (42) includes a relatively large exhaust/exit port at the trialing edge and provides for a straight line of sight through such a port along the passage to the first portion of the third wall, i.e. the leading edge. A portion of the cooling medium (K2) is diverted in the curved flow section and travels through the second passage, while the majority of the cooling medium (K1) travels into the second passage (26). The coolant medium is introduced into the blade through a single passage (K) disposed in the foot portion (30) of the blade. Further, a borescope is capable of being introduced through the second passage due to the relatively large dimension of the exhaust/exit port at the end of the second passage (42), the second passage, and the through passage (36). Semmler is silent as to the effect that the second passage has with respect to dust in the coolant medium. However, it is inherent that the arrangement of Semmler would act such that through passage (36), second passage (42) and the exhaust/exit port at the end of the second passage (42) discharge dust from the coolant medium, as evidenced by Schwarzmann et al. (4,775,296), hereinafter “Schwarzmann”. Specifically, Schwarzmann discloses a blade having a coolant arrangement similar to that of Semmler, in that coolant medium flows through a first passage (54) around a curved section and back inwardly through a second passage. Schwarzmann further includes a hole (72) through the second wall (38) adjacent the tip (36) of the blade that is similar to through passage (36) of Semmler. The hole (72) acts to discharge dust particles that would otherwise be trapped in the outer portion of the curved section due to the rotation forces generated by the fluid flow

machine. (Schwarzmann column 4, lines 35-45). Thereby, the dust discharging effect noted by Schwarzmann is also produced by the like arrangement of Semmler. Additionally, the relative greater mass and inertia of the dust particles would inherently entrain them into the outer flow (K2) of Semmler exiting the blade through the exhaust/exit port at the end of the second passage, which constitutes a dust discharge aperture.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL WIEHE whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHAN WIEHE/
Nathan Wiehe
Examiner
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/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745